

Ds₃ on mc and mc quite rugose or slightly rugose while in 7300 Ds₃ is on PD and mc bears parallel striae. *C. semilunatus* belonging to the group 6600 bears Ds₃ on PD and parallel striae on mc. Thus the distinction envisaged becomes too fragile. By and large, the pliability, plasticity and variability of the traits selected render the key grouping defunct.

The present species differs from the other five species in the presence of a ventral denticulous process at the base of tibiae I and II.

The presence of two crescent-shaped posterior areolae, ds₂ on mc, ds₃ on PD, 4 costae on PD and tibiae I-II with denticulous process bring the present species nearer to *C. dentatus* Viets 1940. *C. eblingi*

sp. nov. differs from *C. dentatus* by the presence of long distal lamellae on telofemorae, patella and tibiae of all legs which are absent in *C. dentatus*. Further, telofemorae III and IV of *C. eblingi* sp. nov. have 0 : 1 ventral setae, where as in *C. dentatus* telofemorae III and IV have 1:1 ventral setae.

ACKNOWLEDGEMENTS

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A NEW SPECIES OF *ERYX* (BOIDAE: SERPENTES: SQUAMATA) FROM SOUTH-WESTERN INDIA¹

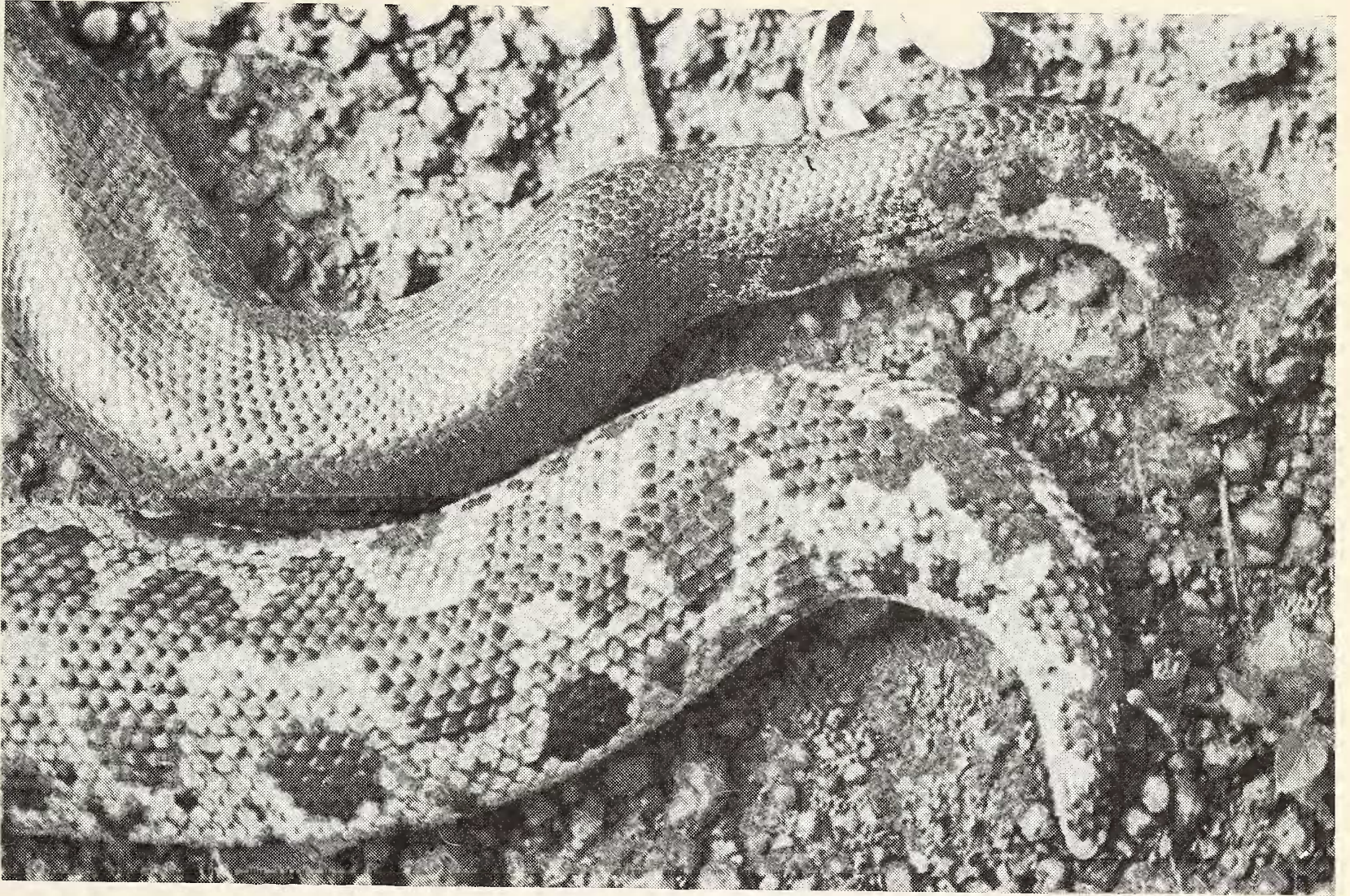
INDRANEIL DAS²
(With three text-figures)

The occurrence of two species of erycine snakes (sand boas), *Eryx conicus* (Schneider, 1801) and *Eryx johnii* (Russell, 1801) in India is documented in the treatises of Gunther (1864), Boulenger (1890, 1893) and Smith (1943), as well

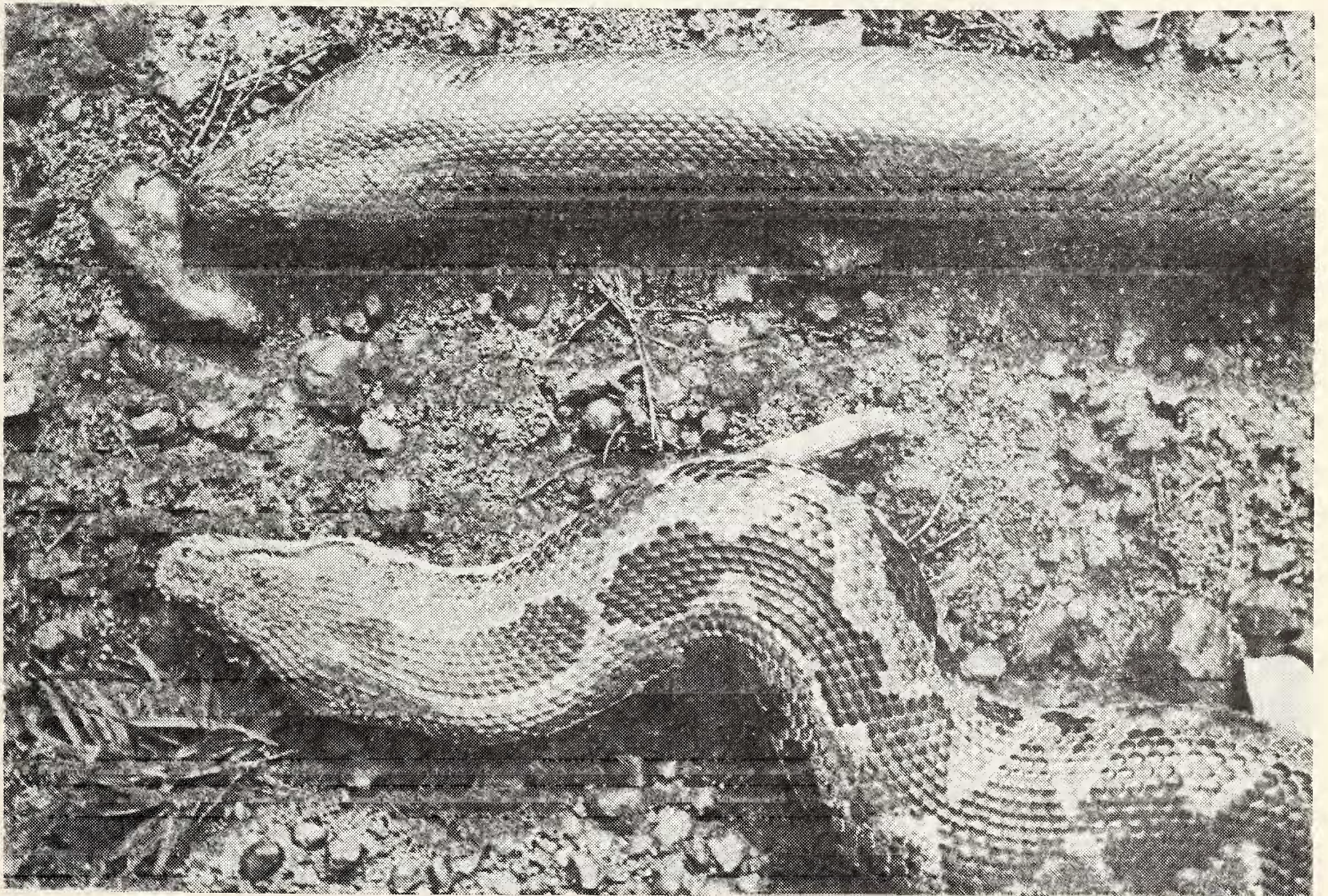
as in more recent works on the group. A third taxonomically cryptic erycine from south-western India, whose identity had apparently gone unnoticed, had aroused our suspicion for a long time. Misidentified by earlier workers as *Eryx conicus* or a *Eryx conicus* X *E. johnii* hybrid, morphological observations on a series demonstrates it as a hitherto undescribed species, described here as:

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²Madras Crocodile Bank Trust, Vadanemmeli, Perur Post, Mahabalipuram Road, Madras 603 104, Tamil Nadu.



Top: Tail of *Eryx whitakeri* sp. nov. Bottom: Tail of *Eryx conicus*



Top: Head and forebody of *Eryx whitakeri* sp. nov. Bottom: Head and forebody of *Eryx conicus*

Eryx whitakeri sp. nov. (Figs. 1 & 2)

Diagnosis: A medium-sized (at least 79.0 cm total body length and 73.5 cm snout-vent length) erycine, distinguished from other described species of the genus *Eryx* by possessing the following morphological characteristics: smooth scales on dorsal aspect of body; rostral without angular edge; mental groove absent; tail-tip blunt in adults; subcaudals 18-25, ventrals 201-206, midbody scale rows 50-54 and in coloration (dorsally vandyke brown with sepia blotches, edged with chamois, forehead dark vinaceous, ventrally pale horn).

Description: Rostral triangular, just visible from above, smooth, width approximately twice height, without angular edge; eyes small (eye diameter/snout-vent length averaging 0.0063), latero-superior, separated from each other by 8-9 longitudinal rows of scales, 10-11 scales surrounding the eyes; pupil black, vertical, surrounding areas golden yellow; nasals and internasals enlarged; upper labials 13-14, lower labials 17-20; head barely distinct from body somewhat triangular; nostrils slit-like, between two enlarged nasals; mental groove absent; anterior teeth of maxillae and mandibles longer than the posterior ones.

Body cylindrical; scales on the dorsal aspect of head and body small, smooth; tail very short (tail length/snout-vent length averaging 0.072); tip



Fig. 1. Holotype of *Eryx whitakeri* sp. nov.

bluntly rounded, especially in the adult; subcaudals single; midbody scales rows 50-54, ventrals 201-206, subcaudals 18-25; anals typically tripartite.

A claw-like spur on each side of the anus in males. Colour (terminology follows Smithe, 1975) dorsally typically vandyke brown, blotched with sepia, darker posteriorly, blotches joined and extend

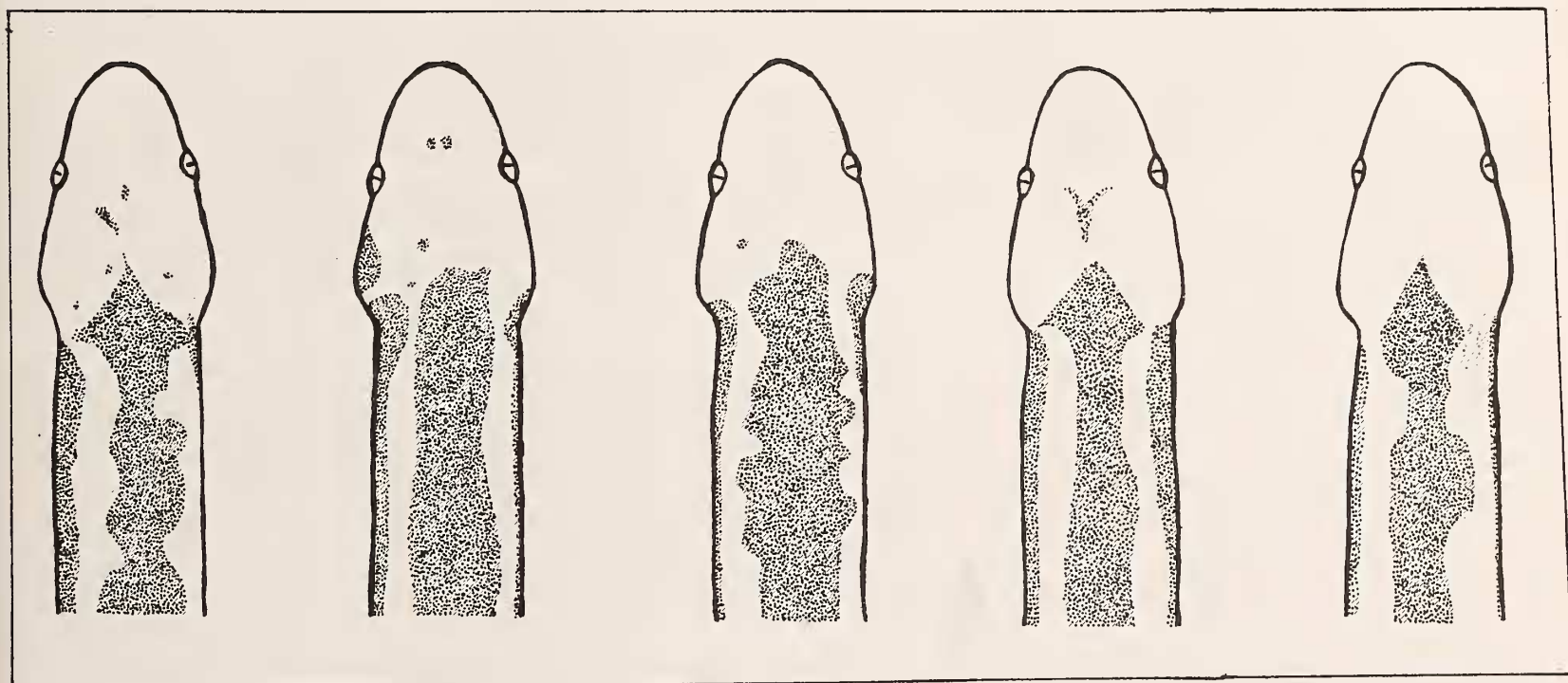


Fig. 2. Variations in head and nape pattern in the types of *Eryx whitakeri* sp. nov. (not to scale)

TABLE 1
MORPHOLOGICAL DATA INCLUDING PHOLIDOSIS OF THE
HOLOTYPE OF *Eryx whitakeri* SP. NOV. (ZSI 24810).

Sex	F
Total body length	55.5
Snout-vent length	52.28
Tail length	3.22
Head width	1.53
Body width	2.43
Rostral width	0.44
Rostral height	0.21
Eye diameter	0.22
Interorbital distance	0.71
Weight	104.0
Midbody scale rows	52
Ventral scales	201
subcaudal scales	18
Anal scales	3
Upper labials	14
Lower labials	20
Scales around eye (L & R)	11 and 10
Scales between eye (L & R)	8

Measurements in cm; weight in g.

uninterrupted up to about the middle half of the body, forming a band with irregular edges, another thinner band of the same colour laterally, separated from the streak from the posterior corner of the eyes to the angle of the jaws; forehead closely approaching dark vinaceous; upper and lower lips indistinctly barred with dark sepia; ventrally pale horn.

Holotype: Adult female. ZSI 24810, Mangalore,

Karnataka State, India. April, 1990. Coll. Mangalore Snake Park.

Paratypes: Two juvenile females, ZSI 24811 and 24812, Cannanore, Kerala State, India. January, 1990, Coll. M. P. Chandran, Cannanore Snake Park; one juvenile male, ZSI 24813, Felneer Hostel, Mangalore, Karnataka State, India. 21 May, 1990, Coll. Krishna Gopal; One juvenile female, ZSI 22152, Panjim sea beach, 29 km west of Ponda, Goa. 26 September, 1969. Coll. R.C. Sharma and party.

Etymology: The new species has been named after Romulus Whitaker in recognition of his contribution to the herpetology of the Indian subcontinent.

Intraspecific variations: The following variations were found in the five types (see Tables 1 and 2): Tail/snout-vent length proportions 0.062 - 0.079 ($X = 0.072 \pm SE 0.0037$) the damaged type from Goa excluded; midbody scale rows 50-52 ($X = 51.0$); ventrals 201-206 ($X = 202.6$); subcaudals 18-25 ($X = 20.4$); upper labials 13-14, ($X = 13.5$); lower labials 17-20 ($X = 18.5$). The holotype is darker dorsally, with indistinct blotches compared to the paratypes, all of which are juveniles (total body length 22.0-29.1 cm). The variations in the pattern on the forehead and nape of the types have been depicted in Fig. 2.

Comparisons: Closely related to *Eryx conicus*, with which it shares a number of characters, such as a

TABLE 2
MORPHOLOGICAL DATA, INCLUDING PHOLIDOSIS OF THE PARATYPES OF *Eryx whitakeri* SP. NOV.
(ZSI 24811, 24812, 24813 AND 22152).

	01	02	03	04
Sex	F	F	M	F
Total body length	22.0	24.2	29.1	29.0
Snout-vent length	20.54	22.49	26.96	26.29
Tail Length	1.46	1.71	2.14	2.71
Head width	0.62	0.68	0.96	1.02
Body width	0.93	0.63	0.98	1.39
Rostral width	0.26	0.27	0.24	0.3
Rostral height	0.14	0.13	0.19	0.17
Eye Diameter	0.16	0.16	0.16	0.22
Interorbital distance	0.49	0.42	0.51	0.56
Spurs	-	-	0.08	-
Midbody scale rows	50	52	50	51
Ventral scales	206	201	202	203
Subcaudal scales	19	18	25	22
Anal scales	3	3	3	2
Upper labials *	14	13	13	
Lower labials	*	20	17	17
Scales around eyes ***	*	11 & 10	10 & 11	13 & 13
Scales between eyes ***	*	8	9	9

* damaged, ** approximate, *** left and right

measurements in cm.

KEY TO THE SPECIES OF THE GENUS *Eryx*

1. Eyes on upper surface of head, separated by four or five longitudinal series of scales..... *E. jayakari* Boulenger
- 1'. Eyes latero-superior, separated by five or more longitudinal series of scales2
2. Rostrals without angular edge3
- 2'. Rostral with sharp angular edge4
3. Tail-tip pointed; dorsal body scales keeled in 40-55 rows; ventrals 161-196*E. conicus* (Schneider)
- 3'. Tail-tip rounded; dorsal body scales smooth in 50-54 rows; ventrals 201-206*E. whitakeri* sp. nov.
4. Tail-tip pointed 5
- 4'. Tail-tip blunt7
5. Tail ends in a curved, claw-like structure; scales between eyes 5*E. muelleri* (Boulenger)
- 5'. Tail ends in a conical scute; scales between 5-126
6. Scales between eyes 9-12; scales round eye 12-15; midbody scale rows 44-59*E. colubrinus* (Linnaeus)
- 6'. Scales between eyes 5-6; scales round eye 9-11; midbody scale rows 34-40*E. somalicus* Scortecci
7. Midbody scale rows 36*E. elegans* (Gray)
- 7'. Midbody scale rows more than 368
8. Width of interorbital space considerably greater than distance from posterior edge of eye to corner of mouth; front and upper surface of snout slightly convex; 2nd upper labial usually higher than 3rd; ventrals without spots, or with widely separated dark spots*E. jaculus* (Linnaeus)
- 8'. Width of interorbital space equals, less than, or slightly greater than distance from posterior edge of eye to corner of mouth; front and upper surface of snout not convex; 2nd upper labial may be lower or higher than 3rd; ventrals usually with dark confluent spots9
9. Width of interorbital space considerably less than distance from posterior edge of eye to corner of mouth; eyes directed upward; scales on tail smooth or with scarcely detectable keels; 2nd upper labial usually lower than 3rd*E. miliaris* (Pallas)
- 9'. Width of interorbital space equal, slightly less than, or slightly greater than distance from posterior edge of eyes to corner of mouth; eyes directed laterally; scales on tail with prominent keels at least in adults10
10. Scales on body smooth, those on tail and on sides near anal region keeled; end of tail much narrower than head; no distinct bands on body or tail, but dark blotches and irregular markings present.....*E. tataricus* (Lichtenstein)
- 10'. Scales on body and tail more or less distinctly keeled; tail extremely blunt, often as wide as head; unicoloured or with series of distinctly dark bands on tail, sometimes on body, especially evident posteriorly*E. johnii* (Russell)

rostral without angular edge, absence of mental groove and eyes latero-superior.

The new species, however differs from *conicus* in lacking keels on the scales of the dorsal surface of the body, including the forehead; a rounded tail tip; a difference in ventral counts (161-196 in *conicus*, 201-206 in *whitakeri* sp. nov.) and a different colour pattern (raw umber blotches in *conicus*, sepia blotches in *whitakeri* sp. nov.)

Eryx whitakeri sp. nov. differs from the only other previously described erycine species from India, *E. johnii*, in the nature of its rostral, which is without an angular edge (*versus* with a sharp angular edge in *johnii*) absence of a mental groove (present in *johnii*) and a different colour pattern (see below).

A dichotomous identification key to the species of the genus *Eryx* (Daudin, 1803), modified from Boulenger (1893) is given.

Taxonomy and natural history: Khaire and Khaire (1986, 1987) reported on a specimen of the new species, identifiable from scale counts (midbody scale rows 52, ventrals 201, subcaudals 18), description and photographs of the tail from Alibag, Raigad district, Maharashtra, which they mistook for a *Eryx conicus* x *Eryx johnii* hybrid. Collection of the present series from the same general area (the southwestern coast of India) indicates that the taxon is valid. Adiyodi's (1960) anecdotal notes on the biology of an erycine, identified as *Eryx conicus*, are suspected to refer to the new species, the animals being referred to as the 'red earth boa', a red body coloration hitherto not recorded in *E. conicus*, which is raw umber, blotched with yellow ochre or cream on the top of body and with a brownish-olive forehead. The new species, however, has a dark vinaceous (= shade of pink) forehead and base colour of body. However, no mention is made of the locality where the observations took place. The author's address being Cochin, also in the coastal area of Kerala, the possibility that the species referred to is *whitakeri* sp. nov. is likely. Sharma (1976) reported on a collection of reptiles from Goa that included a single example of the new species, identified as *Eryx conicus*. The material (ZSI Reg. 22152) was made one of the paratypes of the new species.

The new species is distributed along the southwestern coast of India, in the states of Kerala, Karnataka, Goa and southern Maharashtra (Fig. 3). One

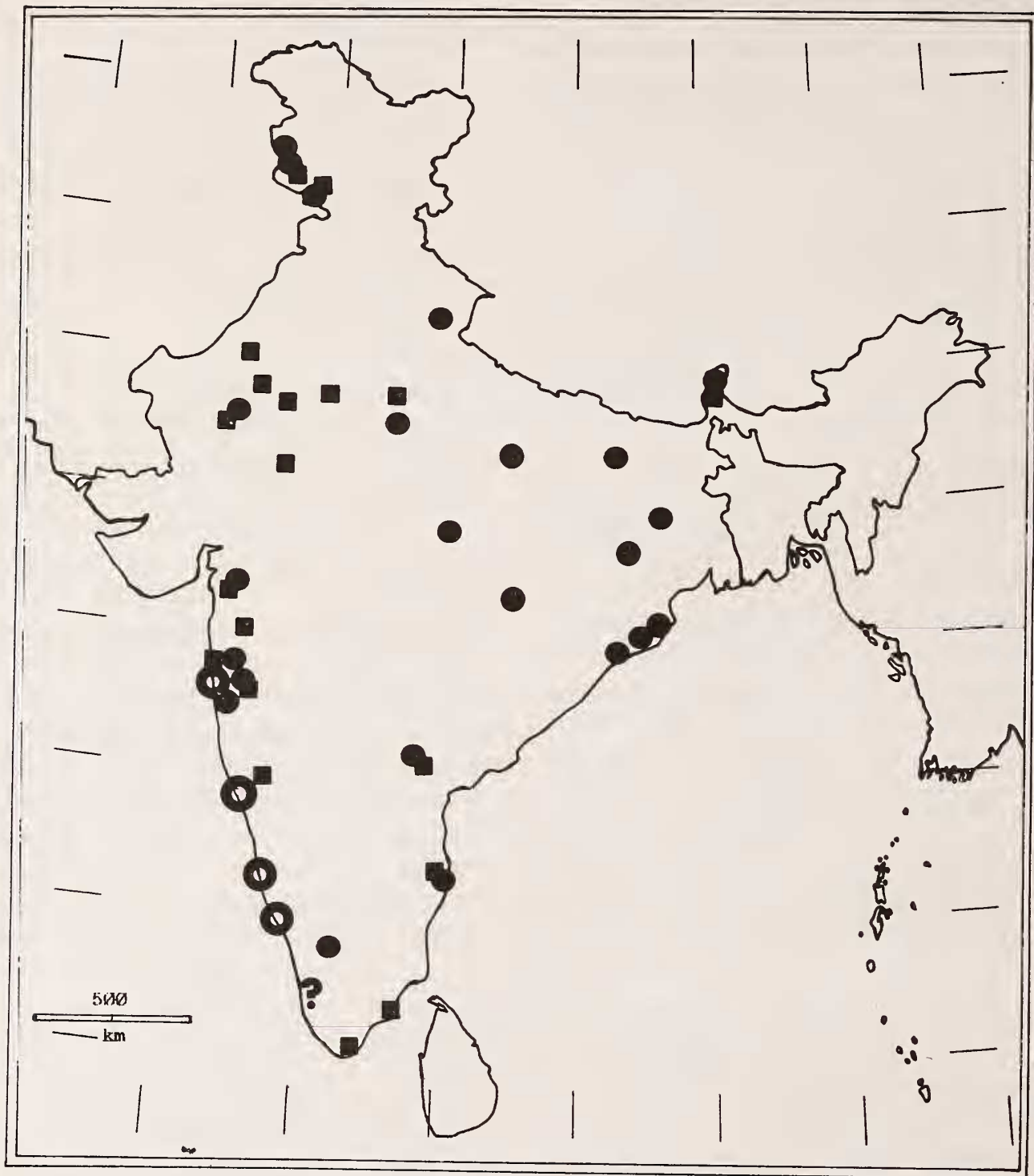


Fig. 3. Distribution of *Eryx whitakeri* sp. nov. (open circles), *Eryx conicus* (closed circles) and *Eryx johnii* (squares) in India based on museum specimen and literature record ? = Record cited in text that is suspected to be the new species.

of the paratypes was collected from scrub country near the sea coast and is abundant in Dakshin Kannada district, Karnataka, where the species is referred to as *irr thale* (= two-headed) in Kannada, on account of the blunt tail-tip that is sometimes mistaken for a second head (Krishna Gopal, *pers. comm.*). Khaire and Khaire (1986) mentioned that their specimen was collected from an area where both *Eryx conicus* and *E. johnii* occur, suggesting that all three species are sympatric.

In captivity, these snakes ate live mice and gerbils, which were seized and swallowed in the manner typical of boids. One juvenile was observed successfully swallowing a young mouse backwards. When alarmed, they hid their heads under the coils of the body or attempted to flatten their bodies onto the substrate. Freshly caught animals showed less aggression than *Eryx conicus*, though when provoked appeared willing to bite. The tip of tail was slightly prehensile.

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The Mangalore Snake Park, through B.K. Sharath provided the holotype, one was collected by

Krishna Gopal and the rest obtained by M.P. Chandran of the Cannanore Snake Park. Manuscript preparation was supported by the Madras Crocodile Bank Trust, and I thank Rom Whitaker, Harry Andrews and Shekar Dattatri for their help. Donald G. Broadley and Garth Underwood read an earlier draft of the manuscript and provided useful comments and information. Don Broadley's help in preparing the key to the genus *Eryx* is gratefully acknowledged.

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CINNAMOMUM CHEMUNGIANUM (LAURACEAE)—A NEW SPECIES FROM KERALA, SOUTHERN INDIA¹

M. MOHAN AND A.N. HENRY²
(With a text-figure)

"Chemungi" (Chemungimottai) is an isolated peak in the southern Western Ghats in Thiruvananthapuram (Trivandrum) District of Kerala. This peak is situated on the approach way from Bonc-cord in Kerala to Kannikatti in Tamil Nadu. A botanically rich area, Chemungi is the type locality of many taxa collected by Bourdillon and others, and described by subsequent authors like Gamble and Fischer. During an intensive plant exploration work in this area for the preparation of the 'Flora of Thiruvananthapuram Dt.' one of us (MM) collected an interesting specimen of the genus *Cinnamomum* Schaeff. This specimen was first matched with *C. travancoricum* Gamble (type locality - Chemungi);

but on a critical examination it was found to be distinct and is hence described as a new species.

Cinnamomum chemungianum sp. nov.

Planta inter *Cinnamomum filipedicellatum* Kosterm. et *C. travancoricum* Gamble quasi intermedia. A *C. filipedicellatum* Kosterm. foliis parvioribus, ovatis, ad basim rotundis, paginis inferis minute pilosis; paniculis pedunculis et pedicellis brevioribus; floribus magnioribus et a *C. travancoricum* Gamble foliis brevioribus, microscopicue pilosis (vice dense pilosis in *C. travancoricum*), ovatis, ad basim rotundis; paniculis glabris (vice racemes dense pubescentis in *C. travancoricum*); perianthiis lobis brevioribus differt.

Shrubs or small trees, 3-4 m tall; branches slender, terete; terminal buds small, minutely sericeous. Leaves 3-7 by 2-4 cm, thinly coriaceous,

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